

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1-42. (Canceled)

43. (Currently amended) An oligonucleotide which has the formula (in 5' to 3' order):
A-B-C-D, in which,

A represents a sequence of between 2-6 locked nucleotide units;

B represents a sequence of between 4-12 non-locked nucleotide units, ~~wherein B has a length of 4-20 nucleotide units;~~

C represents a sequence of between 1-5 locked nucleotide units; and

D represents a non-locked nucleotide unit or a sequence of between 1-3 non-locked nucleotide units;

and the overall length of the oligonucleotide is between 8-26 nucleotide units.

44-47. (Canceled)

48. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has between 1-2 nucleotide units;

and the overall length of the oligonucleotide is between 12-21 nucleotide units.

49. (Previously presented) An oligonucleotide according to claim 43, wherein:

A had a length of 2-5 nucleotide units;

B has a length between 7-9 nucleotide units;

C has a length of 2-4 nucleotide units;

D has a length of 1-2 nucleotide units;

and the overall length of the oligonucleotide is between 15-17 nucleotide units.

50. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units:

B has a length of 8 nucleotide units:

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

and the overall length of the oligonucleotide is 16 nucleotide units.

51. (Currently amended) An oligonucleotide according to ~~claim~~ any of claims 43 and 48-50, in which the locked nucleotide units in A and C are beta-D-oxy-LNA units.

52-58. (Canceled)

59. (Previously presented) An oligonucleotide according to claim 43, wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

60. (Previously presented) An oligonucleotide according to claim 43, in which B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

61. (Previously presented) An oligonucleotide according to claim 43, in which B comprises at least on internucleotide linkage which is not a phosphorothioate linkage.

62. (Previously presented) An oligonucleotide according to claim 43, in which B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

63. (Currently amended) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;

the overall length of the oligonucleotide is between $[[12-21]]$ 12-18 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

64. (Currently amended) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;

the overall length of the oligonucleotide is between $[[12-21]]$ 12-18 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

65. (Currently amended) An oligonucleotide according to claim 43, wherein:

A has a length between 2-5 nucleotide units;

B has a length between 6-10 nucleotide units;

C has a length between 2-4 nucleotide units;

D has a length between 1-2 nucleotide units;
the overall length of the oligonucleotide is between $[[12-21]]$ 12-18 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

66. (Currently amended) An oligonucleotide according to claim 43, wherein:
A has a length between 2-5 nucleotide units;
B has a length between 6-10 nucleotide units;
C has a length between 2-4 nucleotide units;
D has a length between 1-2 nucleotide units;
the overall length of the oligonucleotide is between $[[12-21]]$ 12-18 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

67. (Previously presented) An oligonucleotide according to claim 43, wherein:
A has a length between 2-6 nucleotide units;
B has a length between 4-12 nucleotide units;
C has a length between 1-5 nucleotide units;
D has a length between 1-3 nucleotide units;
the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

68. (Previously presented) An oligonucleotide according to claim 43, wherein:
A has a length between 2-6 nucleotide units;
B has a length between 4-12 nucleotide units;
C has a length between 1-5 nucleotide units;
D has a length between 1-3 nucleotide units;

the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

69. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-6 nucleotide units;

B has a length between 4-12 nucleotide units;

C has a length between 1-5 nucleotide units;

D has a length between 1-3 nucleotide units;

the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

70. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length between 2-6 nucleotide units;

B has a length between 4-12 nucleotide units;

C has a length between 1-5 nucleotide units;

D has a length between 1-3 nucleotide units;

the overall length of the oligonucleotide is between 8-26 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

71-74. (Canceled)

75. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid.

76. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

77. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

78. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of 8 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is 16 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; and wherein B comprises at least one internucleotide linkage which is not a phosphorothioate linkage.

79. (Previously presented) An oligonucleotide according to claim 43, wherein:

A has a length of 4 nucleotide units;

B has a length of between 7-9 nucleotide units;

C has a length of 3 nucleotide units;

D has 1 nucleotide unit;

the overall length of the oligonucleotide is between 15-17 nucleotide units; the locked nucleotide units in A and C are beta-D-oxy-LNA units; B represents a sequence of nucleotide units that makes the oligonucleotide able to recruit RNase H when hybridized to a target nucleic acid; and wherein the internucleoside linkages independently are selected from the group consisting of $-O-P(O)_2-O-$, $-O-P(O,S)-O-$, $-O-P(S)_2-O-$, $-NR^H-P(O)_2-O-$, $-O-P(O,NR^H)-O-$, $-O-PO(R'')-O-$, $-O-PO(CH_3)-O-$, and $-O-PO(NHR^N)-O-$, where R^H is selected from hydrogen and C_{1-6} -alkyl, and R'' is selected from C_{1-6} -alkyl and phenyl.

80. (Previously presented) An oligonucleotide according to claim 79, wherein B comprises at least one internucleotide linkage which is not a $-O-P(O)_2-O-$ linkage.

81. (Previously presented) An oligonucleotide according to claim 79, wherein B comprises at least on internucleotide linkage which is not a phosphorothioate linkage.

82-85. (Canceled)

86. (Previously presented) An oligonucleotide according to claim 43, wherein B has a sequence that comprises at least on DNA nucleotide unit.

Applicant : Charlotte Albaek Thue et al.
Serial No. : 10/717,434
Filed : November 18, 2003
Page : 9 of 20

Attorney's Docket No.: 22460-0010001 / Santaris
1015US1; Inspicos 33152US01

87. (Previously presented) An oligonucleotide according to claim 43, wherein B has a sequence that consists of DNA nucleotide units.

88-96. (Canceled)